Atty.'s Docket No. 42390P4024   Patent

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)

)

       Vishram P. Dalvi, et al.   )   Examiner: Robertson, D.

)

Serial No.: 08/814,928   )   Art Unit: 2187

)

Filing Date: February 27, 1997   )

)

For: PROGRAMMING SUSPEND   )

      STATUS INDICATOR FOR FLASH)

      MEMORY   )

)

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Washington, DC 20231
Board of Patent Appeals & Interferences

TRANSMITTAL COVER LETTER

Enclosed for filing in the U.S. Patent and Trademark Office, before the Board of Patent

Appeals and Interferences is a Reply Brief pursuant to 37 C.F.R. § 1.193(b).

If there are any further charges not accounted for herein, please charge them to

our deposit account No. 02-2666.

                        Respectfully submitted,

                        BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Date Mar. 5, 2002

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES
REPLY BRIEF PURSUANT TO 37 C.F.R. § 1.193(b)

Sir:

The present reply brief is to address arguments that have been raised in the

Examiner's Answer mailed February 8, 2002.

Applicants (Appellants) hereby respectfully submit this reply brief in response

to the Examiner's Answer in the above-referenced application. The application is on

appeal to the Board of Patent Appeals and Interferences from the decision of the

Examiner of Group Art Unit 2187, dated June 21, 2001, finally rejecting claims 31-

37.

Application No. 08/814,928   1   42390P4024

I.   ISSUES

The Examiner's Answer correctly states the issues.

II.   RESPONSE TO ARGUMENT

Applicants agree with the Examiner that the level of ordinary skill in the art of designing memory chips and circuits was high and that such individuals were relatively capable of synthesizing ideas and extrapolating from concepts.

Applicants disagree with the remainder of the Examiner's answer, in general, and specifically as follows.

In regard to part (a) concerning Applicant's Admitted Prior Art (AAPA) the Examiner contends that the AAPA teaches that the time required for a write operation (7-8 microseconds) is two orders of magnitude larger than the time required for a read operation (85 nanoseconds).

The Examiner's statement is misleading in regard to the AAPA. The AAPA does disclose both the time for a write operation as 7-8 microseconds, and the time for a read operation as 85 nanoseconds. And the Examiner's math is correct, this does indeed amount to two orders of magnitude. However, the AAPA never compares these two time frames in the way the Examiner has suggested.

The Examiner has taken approximately eight words from the AAPA and even those are taken out of context. The Examiner then introduces his own comparative phrase "two orders of magnitude larger". This mirrors the Examiner's comments in his rejection where the Examiner contends that while a programming operation did not take as long as an erase operation, it still took a significant amount of time relative to a data read operation. Again, the AAPA never states that the time for a write operation is "significant" relative to a read operation. Such a comparison is not made in the AAPA, and in fact the AAPA teaches away from such a comparison.

One skilled in the art would read the entire relevant portion of the AAPA in order to discern its teaching:

> "Typically, an erase operation takes much longer time to complete as compared to a programming or read operation. For example, an erase operation may take a few milliseconds, whereas a program operation may take 7-8 microseconds and a reading operation may take 85 nanoseconds." (Specification page 1, lines 21- 24)

The AAPA draws a clear line with programming and read operations on one side and erase operations on the other. Moreover, the AAPA teaches that suspending an erase operation improves performance by allowing a read or program operation. This in no way indicates that suspending program operations which would only allow for the performance of read operations, would provide a meaningful improvement in performance.

Perhaps with only the Examiner's paraphrased selective portions of the AAPA to consider, one of ordinary skill in the art might reach the conclusion posited by the Examiner. But this would be pure speculation since the AAPA, in context and, in its entirety teaches programming operations and read operations, together, compared with erase operations. No one of ordinary skill in any art would ignore the very context of what they're reading.

In regard to part (b), concerning the applicability of U.S. Patent No 5,561,628, Terada ("Terada"), the Examiner states that Terada is being relied on for establishing the state of the art with respect to read and write times of flash memory.

Applicants respectfully contend that Terada may not be properly used to establish relative times for read and write operations to specific memory locations. As discussed in the Appeal Brief, this is not the area of endeavor of Terada and Terada makes no mention or comparison of such times.

The Examiner states that AAPA and Terada make clear that it takes significantly longer to erase than to program and that it takes significantly longer to program than to read. The Examiner states that the motivation flows from the difference between the time required for a read operation and a program operation, which Terada teaches to be at least an order of magnitude.

As discussed above, what the AAPA teaches is that, for specific memory locations, it takes significantly longer to erase than to read or program. What Terada teaches is that the time required for erasing all memory locations and the time required for writing to all memory locations are comparable in comparison to the time required to read all memory locations. Terada addresses testing, the present invention addresses performance.
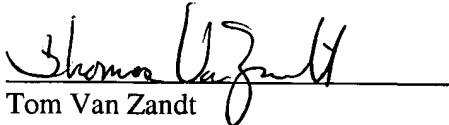
In regard to part (c), Applicants do not suggest that common sense may not be employed to discern an obvious invention. This is clearly not the case here. As discussed above, one skilled in the art would consider the AAPA to teach away from suspending a program operation. Moreover, one skilled in the art, in an attempt to improve system performance, would have no reason to consider Terada at all.

If there are any charges please charge our Deposit Account No. 02-2666.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Date _Mar. 5_, 2002

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